



INVESTOR IN PEOPLE

GB00/2098

4

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

REC'D 13 JUL 2000

WIPO

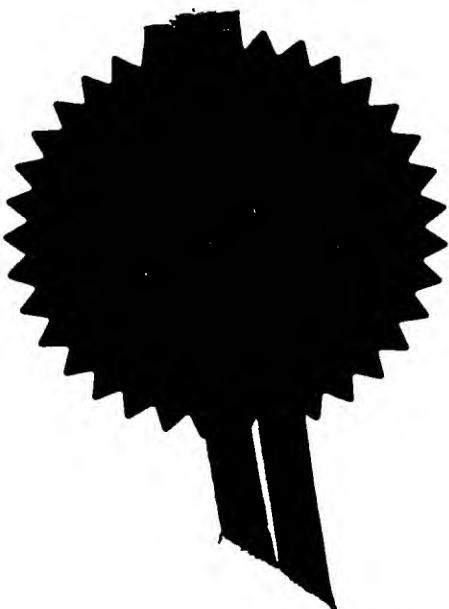
PCT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.



Signed

A. S. Jones

Dated

19 June 2000

**PRIORITY
DOCUMENT**

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

THIS PAGE BLANK (USPTO)

For official use

01 JUN 1999

02JUN99 E451322-5 D03312
P01/7700 0.00 - 9912719.3

Your reference 230P80410

9912719.3

Notes

Please type, or write in dark ink using CAPITAL letters. A prescribed fee is payable for a request for grant of a patent. For details, please contact the Patent Office (telephone 071-438 4700).

16 of the Patents Rules 1990 is the main rule governing the completion and filing of this form.

Do not give trading styles, for example, 'Trading as XYZ company', nationality or former names, for example, 'formerly (known as) ABC Ltd' as these are not required.

Warning

After an application for a Patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977 and will inform the applicant if such prohibition or restriction is necessary. Applicants resident in the United Kingdom are also reminded that under Section 23, applications may not be filed abroad without written permission unless an application has been filed not less than 6 weeks previously in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction revoked.

The
Patent
Office

Request for grant of a Patent

Form 1/77

Patents Act 1977

1 Title of invention

- 1 Please give the title of the invention A method of packaging goods

2 Applicant's details

☐ First or only applicant

- 2a If you are applying as a corporate body please give:
Corporate name

Country (and State
of incorporation, if
appropriate)

- 2b If you are applying as an individual or one of a partnership please give in full:

Surname Laitt,

Forenames Andrew

- 2c In all cases, please give the following details:

Address 22 Dempster Road,
Wandsworth, London SW18 1AT.
United Kingdom
United Kingdom

UK postcode
(if applicable)

Country

ADP number
(if known)

7546377 007

2d, 2e and 2f: If there are further applicants please provide details on a separate sheet of paper.

☐ **Second applicant (if any)**

2d If you are applying as a corporate please give:

Corporate name

Country (and State
of incorporation, if
appropriate)

2e If you are applying as an individual or one of a partnership please give in full:

Surname

Forenames

2f **In all cases**, please give the following details:

Address

UK postcode
(if applicable)

Country

ADP number
(if known)

Ⓢ An address for service in the
United Kingdom must be supplied

Please mark correct box

Ⓢ Address for service details

3a Have you appointed an agent to deal with your application?

Yes ☒ No ☐ → go to 3b

↓
please give details below

Agent's name

Marks & Clerk

Agent's address

57-60 Lincoln's Inn Fields
LONDON
WC2A 3LS.

Postcode

Agent's ADP
number

18001

3b: If you have appointed an agent, all
correspondence concerning your
application will be sent to the agent's
United Kingdom address.

3b If you have not appointed an agent please give a name and address in the
United Kingdom to which all correspondence will be sent:

Name

Address

Postcode

ADP number
(if known)

Daytime telephone
number (if available)

Filing date
(day, month, year)

- ⑦ The answer must be 'No' if:
○ any applicant is not an inventor
○ there is an inventor who is not an applicant, or
○ any applicant is a corporate body.

⑤ Please supply duplicates of claim(s), abstract, description and drawing(s).

Please mark correct box(es)

⑥ You or your appointed agent (see Rule 90 of the Patents Rules 1990) must sign this request.

Please sign here →

A completed fee sheet should preferably accompany the fee.

Inventorship

7 Are you (the applicant or applicants) the sole inventor or the joint inventor?

Please mark correct box

Yes ☒ No ☐

A Statement of Inventorship on Patents Form 7/77 will need to be filed (see Rule 15).

Checklist

8a Please fill in the number of sheets for each of the following types of document contained in this application.

Continuation sheets for this Patents Form 1/77

Claim(s)

3

Description

6

Abstract

1

Drawing(s)

5

formal

8b Which of the following documents also accompanies the application?

Priority documents (please state how many)

Translation(s) of Priority documents (please state how many)

Patents Form 7/77 – Statement of Inventorship and Right to Grant
(please state how many)

Patents Form 9/77 – Preliminary Examination/Search

Patents Form 10/77 – Request for Substantive Examination

Request

I/We request the grant of a patent on the basis of this application.

Signed Marks & Clark Date 1-6-99
(day month year)

Please return the completed form, attachments and duplicates where requested, together with the prescribed fee to:

☐ The Comptroller
The Patent Office
Cardiff Road
Newport
Gwent
NP9 1RH

or

☐ The Comptroller
The Patent Office
25 Southampton Buildings
London
WC2A 1AY

A Method Of Packaging Goods

The present invention relates to a method of packaging goods, in particular packaging food-stuffs which remain fresh for a limited period only, such as breakfast cereals, crisps, biscuits and ground coffee.

Conventionally, food products such as breakfast cereals and the like are packaged in cartons which contain a sealed bag for holding a quantity of the breakfast cereal, usually in quantities of 125g to 1000g. Once the carton is opened and the factory seal of the bag is broken, the contents become stale and soft within a few weeks, or even sooner. Once stale the enjoyment of the crisp and fresh taste of the newly opened packet is lost. One solution to this is to supply individual 25g or 30g portion packs or any other suitable size of portion pack that may be desired. Portion packs comprise a bag containing an individual portion within an individual carton. This form of packaging is comparatively expensive compared with the larger cartons.

The present invention seeks to provide a method of manufacturing packaging, which gives consumers the benefit of enjoying the fresh, crisp taste of a newly opened packet every time they consume the product. The present invention also seeks to provide a method of manufacturing packaging which is relatively inexpensive yet provides the taste and freshness benefits of an individual portion pack.

The invention provides a method of packaging goods as claimed in Claim 1.

The strip of sealed pouches may be arranged substantially upright or transversely in the carton. Preferably, the strip of sealed pouches is arranged in a concertina or zigzag configuration in the carton.

In providing a strip of sealed pouches, a standard serving portion of a food product, for example breakfast cereal, of typically 25g or 30g, is provided and therefore the crisp and fresh taste of a newly opened packet can be enjoyed every time the cereal is consumed since breaking the seal of one pouch does not affect the integrity of the remaining pouches in the strip.

The packaged goods made according to the present invention provide a less expensive means of providing individual portions of a food product than that of the previously mentioned portion packs. Since the food product contained within a pouch remains fresh, there is little wastage of stale food products and the product has an extended shelf life. It also avoids the time difficulty in trying to carefully re-seal and close the carton in order to maintain integrity of the food product once the carton has been opened. It also provides a more hygienic method of serving food other than of sharing a large carton. Furthermore, it avoids the problem of attracting pests such as ants and mice to an open packet of food. Furthermore, providing individual portions of the food product makes it easier for calorie control and portion control for dieters. Packaging the food in individual pouches also reduces the risk of damage to particularly brittle food-stuffs, such as crisp cereal flakes, since the packaging and layer of air within each pouch and between each pouch has a cushioning effect, thus reducing the likelihood of breakage.

The method of packaging goods according to the present invention provides a relatively low cost of manufacture since the strip of pouches can easily be folded concertina-fashion into a typical existing carton which avoids the need to re-tool carton making machines. The method utilises established and proven materials. Further, the cartons can be varied in width, height and depth to provide different sizes giving a large shelf presence in retail outlets for promotional purposes etc. The method provides for different pack sizes to be produced on one machine, for example 8 pouches, 10, 16 or 20 pouch packets.

Furthermore, the method of packaging goods according to the present invention provides the option of combining different food products in a single carton.

Preferred embodiments of the present invention will now be described with reference to the accompanying drawings, wherein:

Figure 1 shows in a diagrammatic perspective view an initial step of forming a tube;

Figure 2 shows in a view similar to Figure 1 the steps of filling, sealing and perforating pouches formed in the tube;

Figure 3 shows in an enlarged perspective view the combined pouch perforating and severing tool of Figure 2;

Figure 4 shows a strip of pouches arranged in a zigzag manner across the width of the carton;

Figure 5 shows two strips of pouches arranged in a zigzag manner across the depth of the carton;

Figure 6 shows two strips of pouches arranged in a zigzag manner across the width of the carton;

Figure 7 shows the strip of pouches of Figure 5 joined side by side;

Figure 8 shows a strip of pouches arranged in a zigzag manner along the height of the carton;

Figure 9 shows two strips of pouches arranged in a zigzag manner along the height of the carton and

Figure 10 shows two strips of pouches arranged substantially vertically in the carton.

In Figure 1 a sheet of plastics material 1 is wrapped around a cylindrical former 200 so that two longitudinal edges 201 of the plastics material overlap to form a tube 1¹.

Although Figure 1 shows a tube of circular cross-section, the tube may have any other suitable cross-section such as a square or rectangular cross-section. The overlapping longitudinal edges 201 are then heat-sealed by means of a heated seam former 202 to form a central longitudinal seam 2. The base of the tube 1¹ is then sealed by means of heated sealing jaws 203 (See Figure 2). Two heated sealing jaws 203 move from opposite sides of the tube 1¹ towards the centre of the tube until they both contact the plastics material of the tube 1¹. A seal 3, which is transverse to and overlaps the longitudinal seam 2, is thus formed. At the same time as the sealing jaws 203 are

moving towards the centre of the tube, opposed pleat formers (not shown) move in a transverse direction to the sealing jaws 203 (in the direction of the arrows 4¹), also towards the centre of the tube 1¹. The pleat formers provide tucks in the side of the tube 1¹ so as to form diametrically-opposed pleats 4. The tube 1¹ is then filled with food-stuff 204 to be packaged. The food-stuff 204 is simply dropped into the tube 1¹ from above. As the food-stuff 204 is being dropped into the tube 1¹, the tube 1¹ is moved downwards with respect to the sealing jaws 203 and when the desired quantity of the food-stuff 204 has been dropped into the tube 1¹, the sealing jaws 203 and pleat formers move once again towards the centre of the tube 1¹ to simultaneously seal the tube 1¹ and form tucks at a pre-determined distance from the sealed base so as to form a pouch 5. This further seal 3 will commonly form the top seal of the pouch 5 and the base seal of a second pouch 5a. The main bodies of the pouches 5 and 5a are substantially rectangular in cross-section. The pouches 5 and 5a are substantially the same size as one another. To allow separation of the pouches 5 and 5a at a later stage perforations 6 are made in the common seal 3. The perforations 6 are introduced into the common seal by means of a comb-type cutter 205, which is located in one of the sealing jaws 203. The comb-type cutter 205 is illustrated in greater detail in Figure 3.

Once the sealing jaws 203 have formed the common seal 3, the comb-type cutter 205 moves from a retracted position in the sealing jaw 203 until it meets and pierces the common seal 3 at intervals across its width. The intervals between the perforations are determined by the spacing of teeth 206 of the comb-type cutter 205. The comb-type cutter 205 then retracts to its rest position until sealing next takes place. When a desired number of pouches has been filled and sealed to form a strip 7, for example 10 pouches, the step of forming perforations 6 in the common seal 3 is replaced by a cutting step. The comb-type cutter 205 will also be used in the cutting step. As before, the comb-type cutter will move from its retracted position in the sealing jaw 203, but instead of merely piercing the common seal 3, the comb-type cutter 205 pierces right through the common seal 3 until cutting edges 207 meet the common seal 3 and two adjacent pouches are completely severed from one another. The lower of the adjacent

pouches is still attached to the strip 7 of filled and sealed pouches while the upper of the adjacent pouches forms a base for a further strip of pouches.

The strip of filled and sealed pouches 7 is then inserted into a carton 8, as shown for example in Figure 4, where the strip of pouches is arranged in a concertina or zigzag manner across the width of the carton 8 in layers, each layer having two pouches.

Alternative arrangements of the pouches are shown in Figures 5 to 10. In Figure 5, for example, two strips of pouches are arranged parallel to one another and in a zigzag manner across the depth (into the page) of the carton 8 in layers, each layer having only one pouch. Figure 6 shows two strips of pouches arranged in a zigzag manner across the width of the carton 8 in layers, each layer having only one pouch.

Figure 7 shows a similar arrangement with a double strip 9 of pouches arranged in a zigzag manner across the depth of the carton 8. The double strip 9 of pouches is formed by dividing the tube 1¹ to form two sub-tubes (not shown) attached to one another by means of a series of central joining seams 10. The two sub-tubes are then sealed and filled in a similar manner to that described with reference to Figures 2 and 3. The central joining seams 10 are arranged parallel to and are attached to a surface 11 of each pouch. The two joined strips are separable from one another by way of perforations 12 in the central joining seams 10. The perforations 12 run substantially centrally along the length of the central joining seams 10.

Figure 8 shows a single strip of pouches arranged in a zigzag manner along the height of the carton 8 in layers, each layer having two pouches. Figure 9 shows a two strips of pouches arranged along the height of the carton 8 in layers, each layer of each strip having two pouches.

Figure 10 shows a further embodiment of the invention, in which the main bodies of the pouches 5 and 5a are substantially square in cross-section, and two separate strips of pouches are arranged parallel to one another and substantially vertically in the carton 8.

A single carton 8 might also contain several strips in which the size of the pouches in the respective strips is not the same. For example, a single carton might contain strips containing small pouches for children as well as strips of larger pouches for adults.

It will be appreciated that variations of the embodiments described above are also possible. For example, in the sealing step of the manufacturing process may use adhesive as a sealing means as an alternative to heat. The tube 1¹ might be formed of waxed paper, rather than plastics.

Printed matter may be applied to each pouch prior to filling each pouch with the food-stuff, e.g. information relating to the food and calorie contents, the sell-by date etc.

CLAIMS:

1. A method of packaging goods comprising the steps of forming a tube, forming a first seal at a lower end of the tube, feeding a pre-determined amount of the goods to be packaged into the tube, forming a second seal in the tube at a pre-determined distance above the first seal, repeating the steps of feeding the goods and sealing along the tube to form a strip of sealed pouches containing the goods, inserting the strip of sealed pouches into a carton.
2. A method as claimed in Claim 1, wherein the strip of sealed pouches is arranged substantially upright or transverse in the carton.
3. A method as claimed in Claim 1, wherein the strip of sealed pouches is arranged in a concertina configuration in the carton.
4. A method as claimed in Claim 2 or 3, wherein at least two strips of sealed pouches are arranged in the carton.
5. A method as claimed in Claim 4, wherein the at least two strips of sealed pouches are arranged parallel to one another in the carton.
6. A method as claimed in Claim 4 or Claim 5, wherein the at least two strips of sealed pouches are releasably attached to one another.
7. A method as claimed in any one of the preceding claims, wherein at least one pleat is formed in the tube so that the pouches are expandable.
8. A method as claimed in Claim 7, wherein the at least one pleat is formed in each pouch after the lower end of each pouch is sealed but before the goods are fed into the pouch.

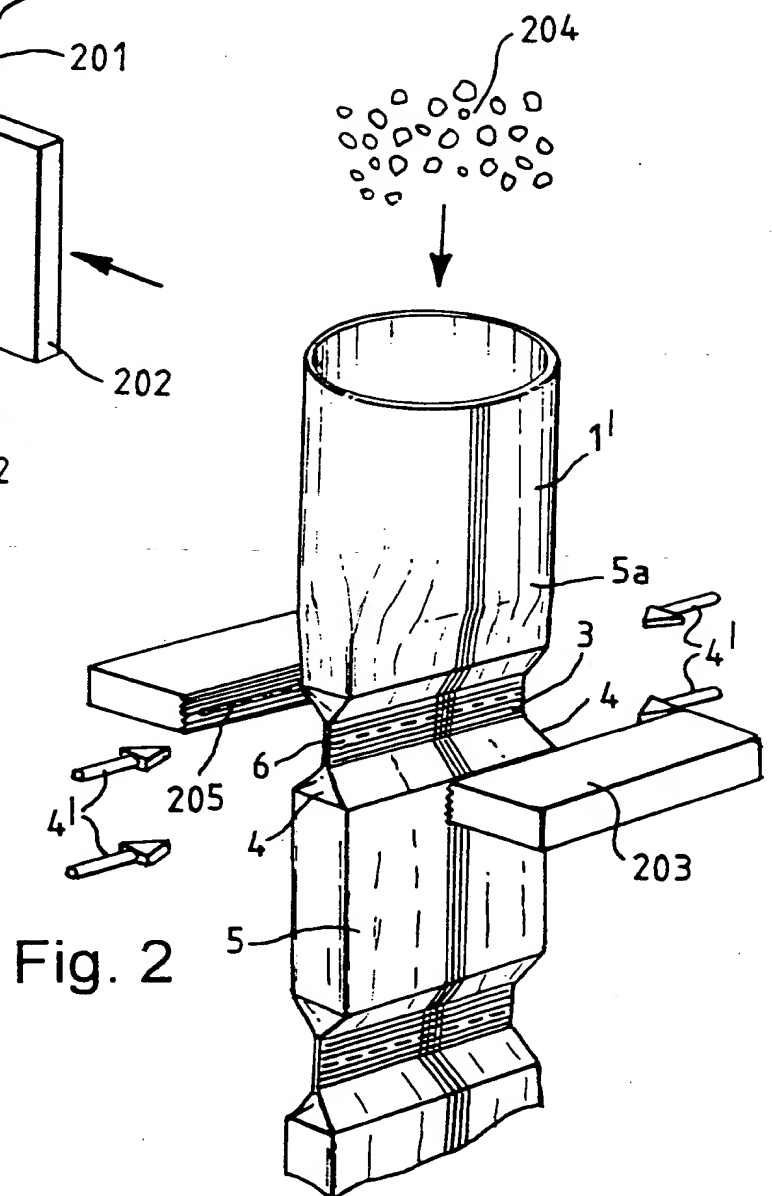
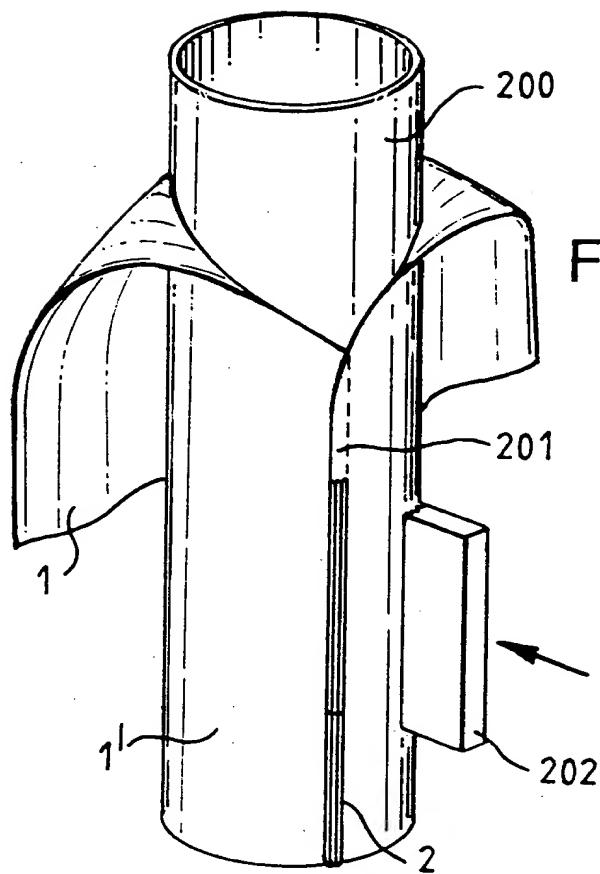
9. A method as claimed in any one of the preceding claims, wherein the pouches in the or each strip are substantially the same size.
10. A method as claimed in any one of the preceding claims, wherein each pouch is substantially cuboidal in shape.
11. A method as claimed in Claim 10, wherein each pouch is substantially cubic in shape.
12. A method as claimed in any one of the preceding claims, wherein the sealing is by means of heat.
13. A method as claimed in any one of the preceding claims, wherein the sealing is by means of an adhesive.
14. A method as claimed in any one of the preceding claims, wherein the tube is formed of plastics material.
15. A method as claimed in any one of Claims 1 to 13, wherein the tube is formed of waxed paper.
16. A method as claimed in any one of the preceding claims, wherein printed matter is applied to each pouch of the strip of pouches.
17. A method as claimed in any one of the preceding claims, wherein perforations are formed between each pouch of the strip of pouches to enable separation of the pouches from one another.
18. A method as claimed in Claim 17, wherein the perforations are formed by means of a comb-type cutter.

19. A method as claimed in Claim 18, wherein the comb-type cutter has means for severing the pouches from one another.
20. A method as claimed in Claim 19, wherein the pouches are severed from one another after a pre-determined number of pouches has been filled and sealed.
21. A method of packaging goods substantially as herein described with reference to any one of the embodiments shown in the accompanying drawings.
22. Packaged goods produced by the method as claimed in any one of the preceding claims.

ABSTRACT**A Method Of Packaging Goods**

A method of packaging goods comprises the steps of forming a tube (1¹), forming a first seal (3) at a lower end of the tube (1¹), feeding a pre-determined amount of the goods to be packaged (204) into the tube (1¹), forming a second seal in the tube (1¹) at a pre-determined distance above the first seal (3), repeating the steps of feeding the goods and sealing along the tube (1¹) to form a strip of sealed pouches (7) containing the goods (204) and inserting the strip of sealed pouches (7) into a carton (8).

(Figure 2)



THIS PAGE BLANK (USPTO)

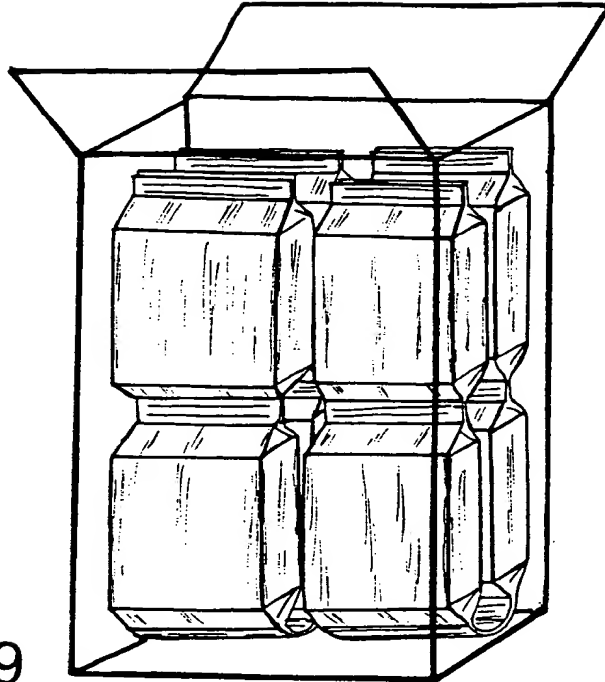


Fig. 9

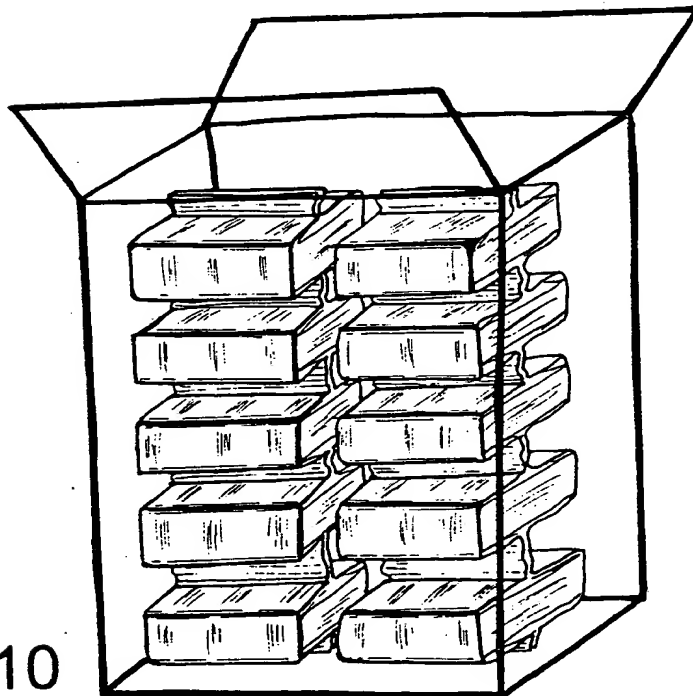


Fig. 10

THIS PAGE BLANK (USPTO)

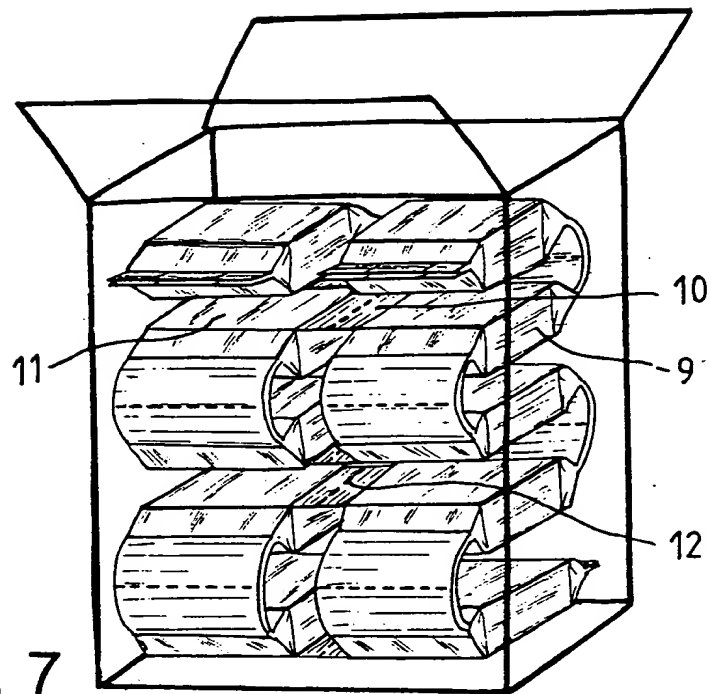


Fig. 7

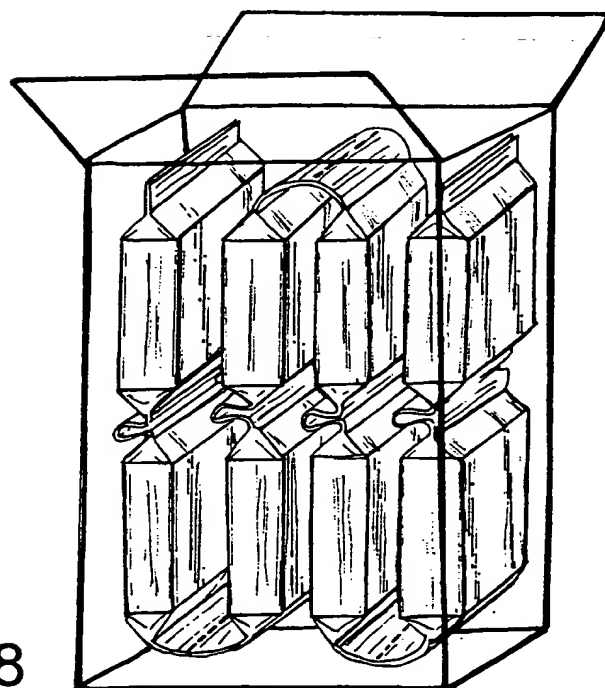


Fig. 8

THIS PAGE BLANK (USPTO)

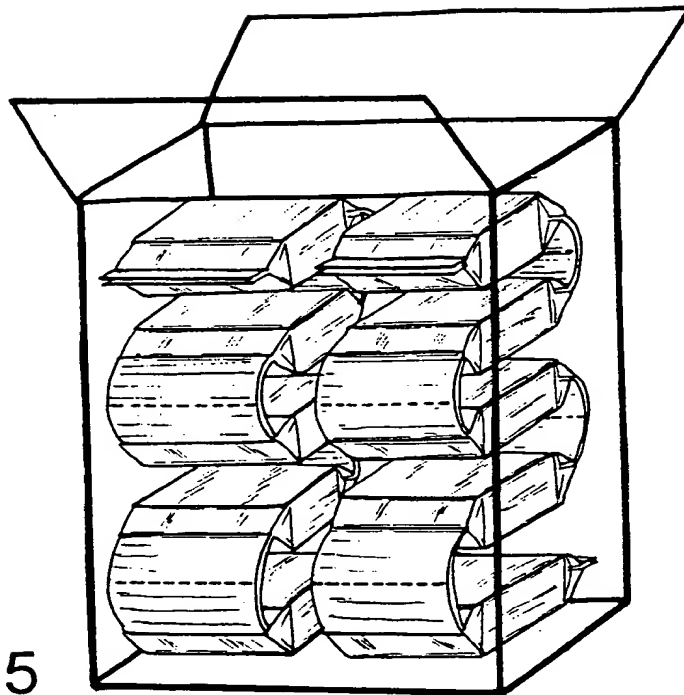


Fig. 5

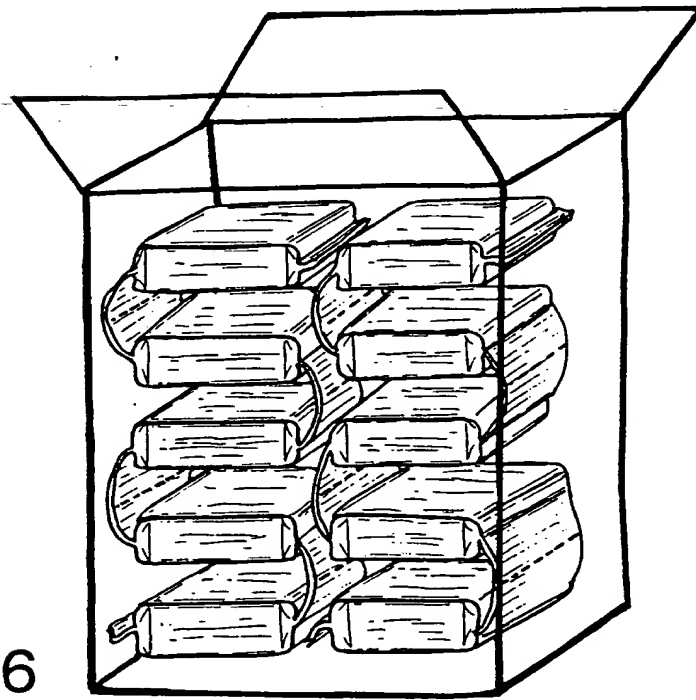


Fig. 6

THIS PAGE BLANK (USPTO)

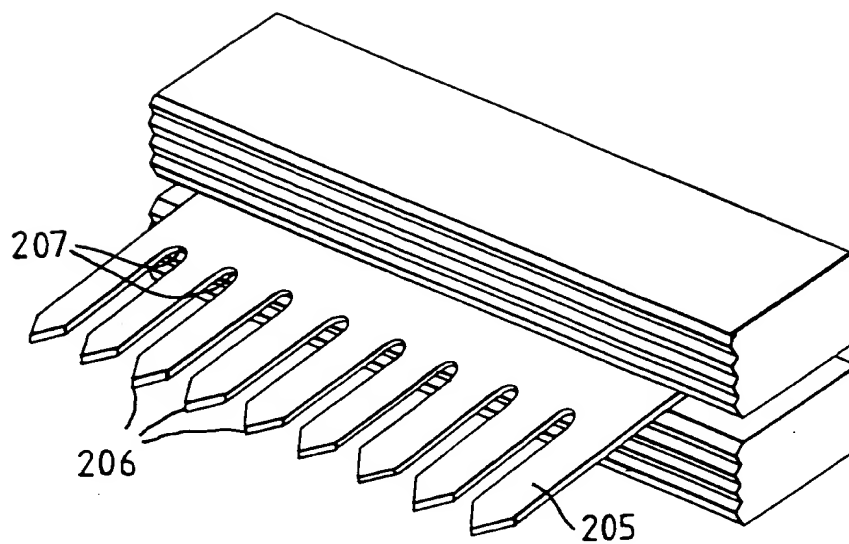


Fig. 3

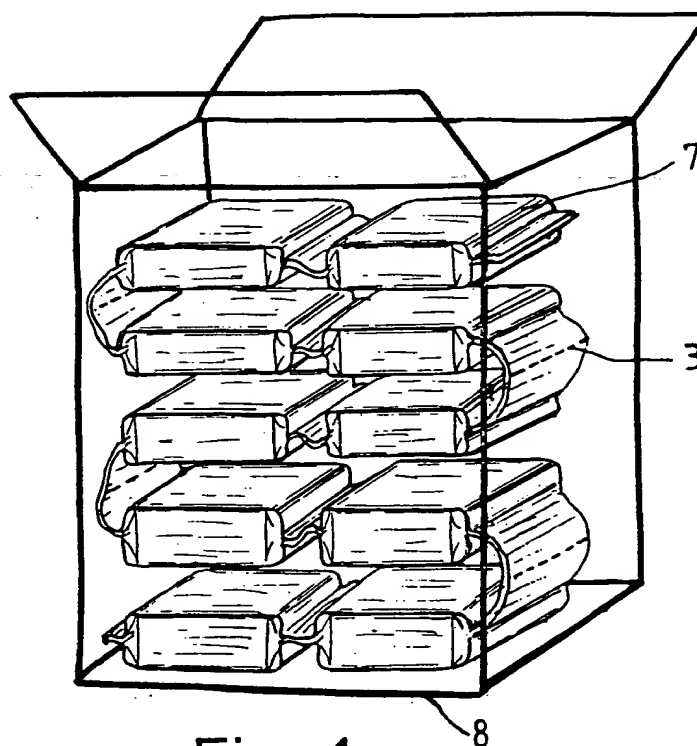


Fig. 4

1/6/00 020008

1/6/00

Marks & Clerk